

# **U.S. Environmental Protection Agency Natural Gas STAR Program**



## **Overview for Production Companies**

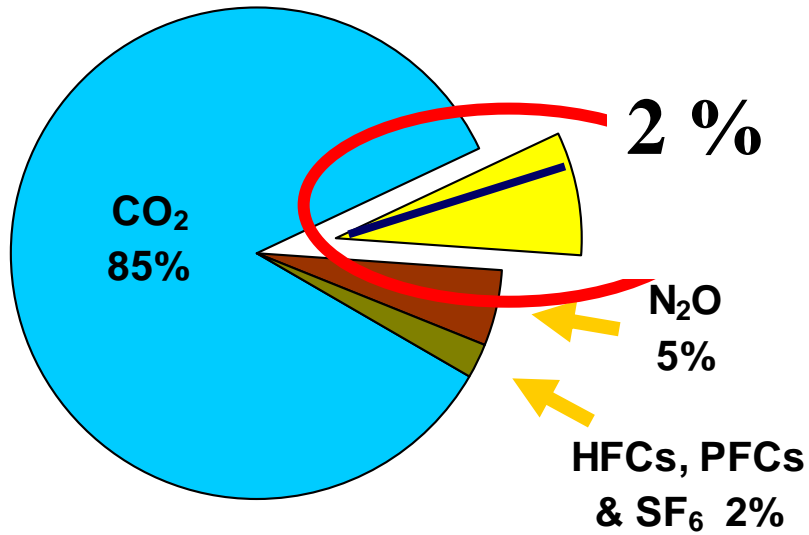
**Reducing Emissions  
Increasing Efficiency  
Maximizing Profits**





# Background: U.S. Greenhouse Gas Emissions

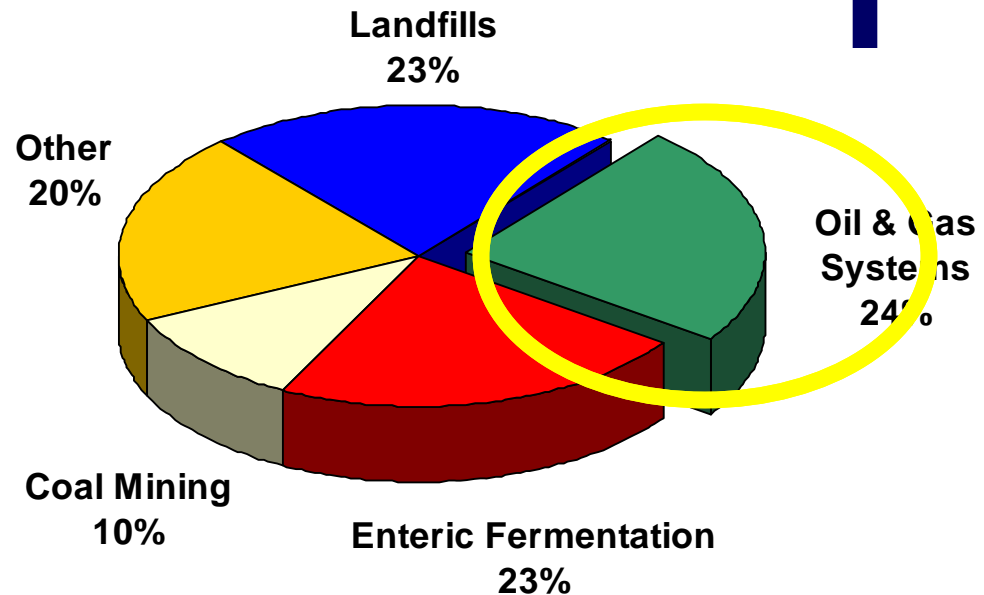
## U.S. Greenhouse Gas Emissions All Sources



Oil and gas systems are the **largest** man-made source of methane emissions (**24%**)

Methane emissions from Oil and gas systems make up 2% of total U.S. greenhouse gas emissions

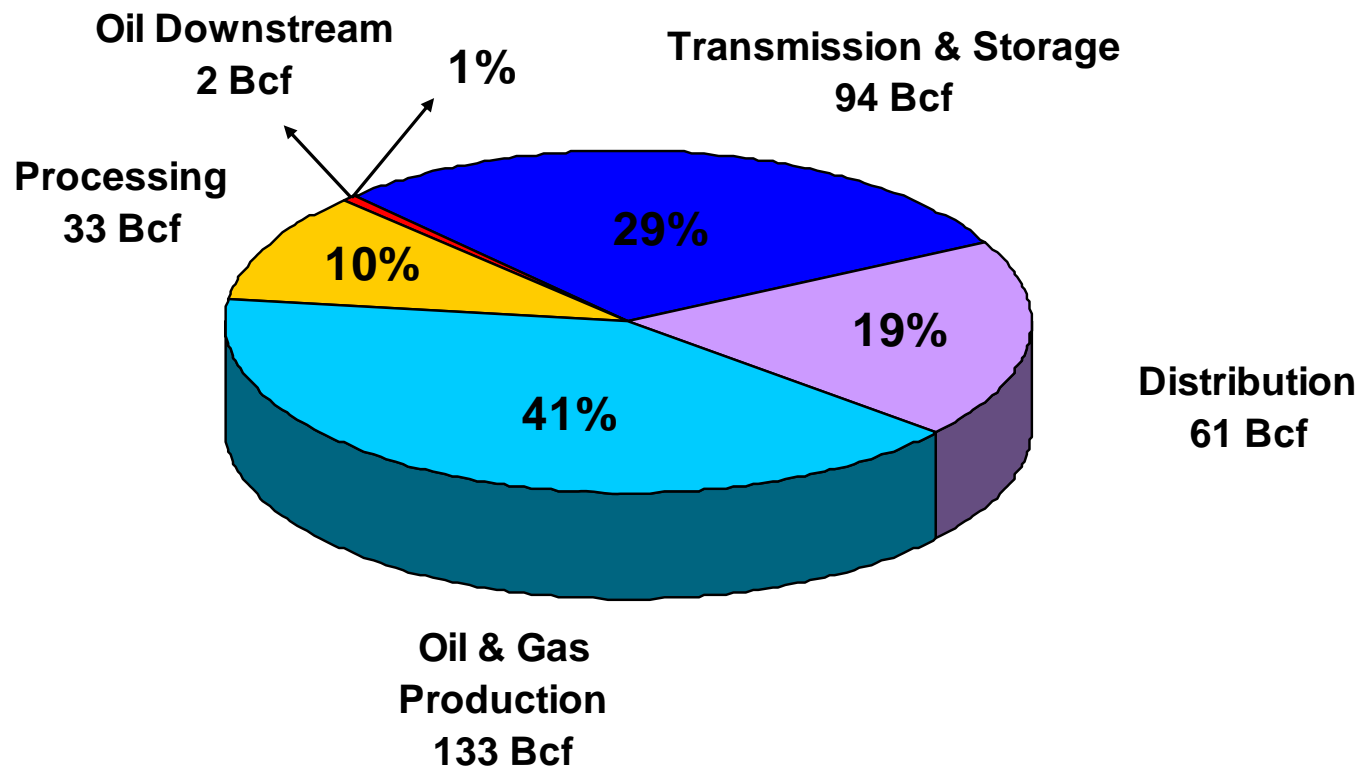
## U.S. Methane Emissions by Sector





# Background: U.S. Oil and Gas Methane Emissions by Sector

- 2006 U.S. methane emissions from oil and natural gas industry: 323 Bcf (2% of total U.S. greenhouse gas emissions)

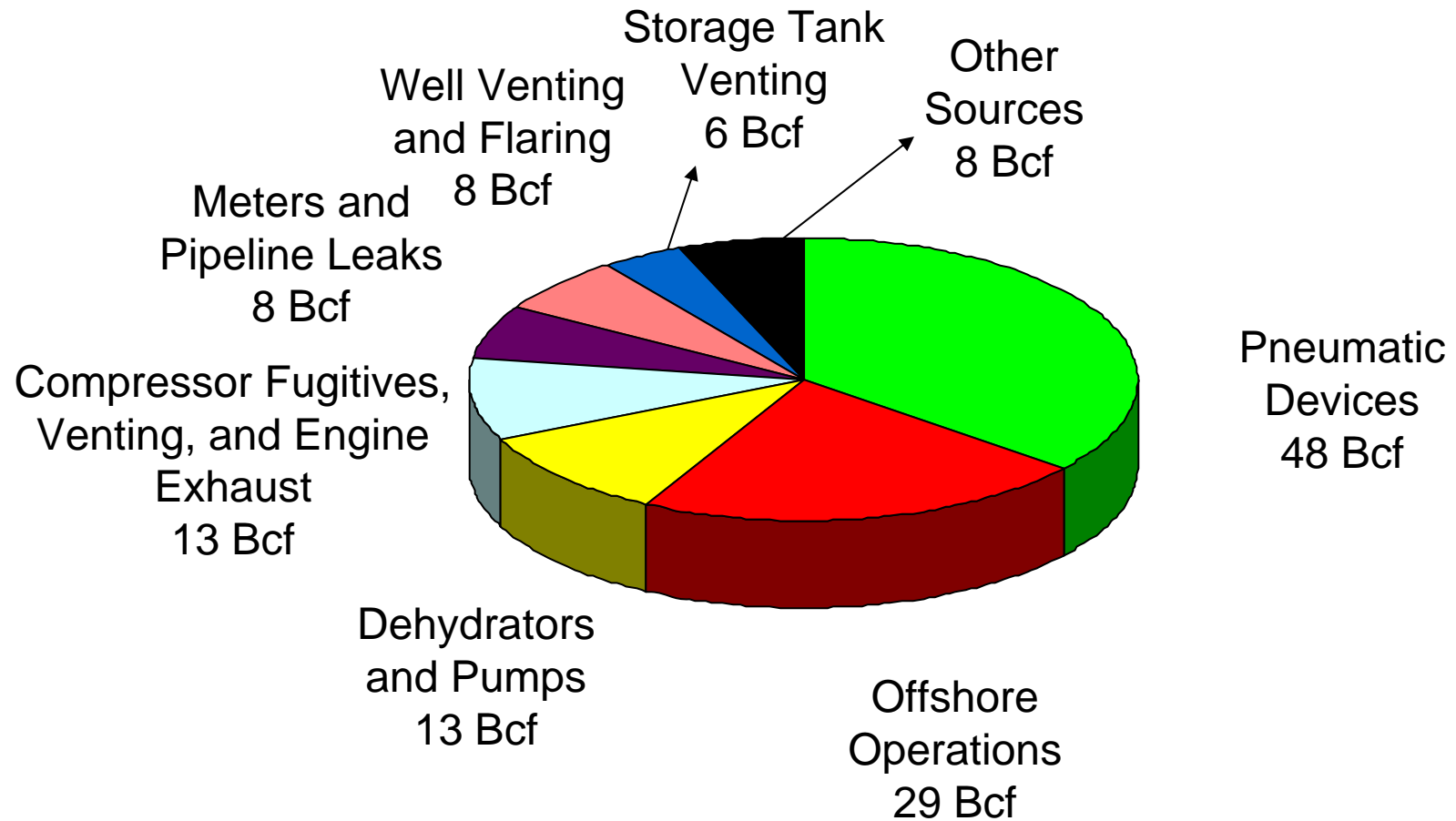


Source: EPA. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006*. April, 2008.

Note: Natural Gas STAR reductions from gathering and boosting operations are reflected in the production sector.



# Background: Production Sector Methane Emissions



Source: EPA. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006*. April, 2008.

Note: Natural Gas STAR reductions from gathering and boosting operations are reflected in the production sector.



# U.S. Oil & Natural Gas Opportunities: Why Gas STAR?

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- 💧 **323 Bcf of methane emissions per year amounts to:**
  - 💧 \$2.26B worth of gas lost (at \$7/Mcf)
  - 💧 CO<sub>2</sub> emissions from the electricity use of 17.3 million homes for one year
  - 💧 Annual greenhouse gas emissions from 23.9 million passenger vehicles
  
- 💧 **U.S. oil and natural gas industry has an opportunity to cost-effectively reduce methane emissions resulting in:**
  - 💧 Increased operational efficiency
  - 💧 Increased profits
  - 💧 Increased domestic gas supply
  - 💧 Improved safety
  - 💧 Improved environmental performance
  - 💧 Better public relations





# The Natural Gas STAR Program

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The Natural Gas STAR Program is a *flexible, voluntary partnership* between EPA and the oil and natural gas industry designed to *cost-effectively* reduce methane emissions from oil and natural gas operations.

## **More Than 120 Partners:**

For a complete listing of Natural Gas STAR partner companies and industry association endorsers, visit  
[epa.gov/gasstar/partners/index.html](http://epa.gov/gasstar/partners/index.html)



# Key Components

- 💧 **Guidance on new technologies and practices**
  - 💧 Technical documents on more than 80 cost-effective technologies and practices
  - 💧 Free Technology Transfer workshops
  - 💧 One-on-one technical assistance to identify and prioritize cost-effective methane emission reduction opportunities



- 💧 **Annual record of partner voluntary actions and methane savings**

## Technical Information



**Project Demonstrations**

## Workshops



**Annual Report 2004**

**Company Information**

Company Name: \_\_\_\_\_  
 Site Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City/State/Zip Code: \_\_\_\_\_  
 Telephone: \_\_\_\_\_  
 Fax: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

**Production Information**

☐ I am a company representative who is responsible for the data reported in this report.

☐ I am a company representative who is not responsible for the data reported in this report.

☐ I am a company representative who is not responsible for the data reported in this report.

Report prepared by: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Annual Reports**





## Benefits to Participation

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- 💧 **Save time identifying the “right” technologies and practices to reduce methane emissions and increase revenue**
  - 💧 Technical information and economic analyses based on partner companies’ field experiences
  - 💧 One-on-one assistance to identify and prioritize cost-effective projects appropriate for a company’s operating environment
- 💧 **Build network with industry peers, draw upon their experience and success**
  - 💧 Sector specific Technology Transfer Workshops and Annual Implementation Workshops
- 💧 **Minimal resources required to administer the Program—these are provided:**
  - 💧 Standardized forms and default emission values
  - 💧 Data collection software and online reporting
  - 💧 Gas STAR technical support staff
- 💧 **Enhanced corporate reputation**
  - 💧 Public recognition and easy methods to quantify environmental benefits
- 💧 **Voluntary record of reductions and benchmarking reports detailing accomplishments**





## Key Steps to Participation

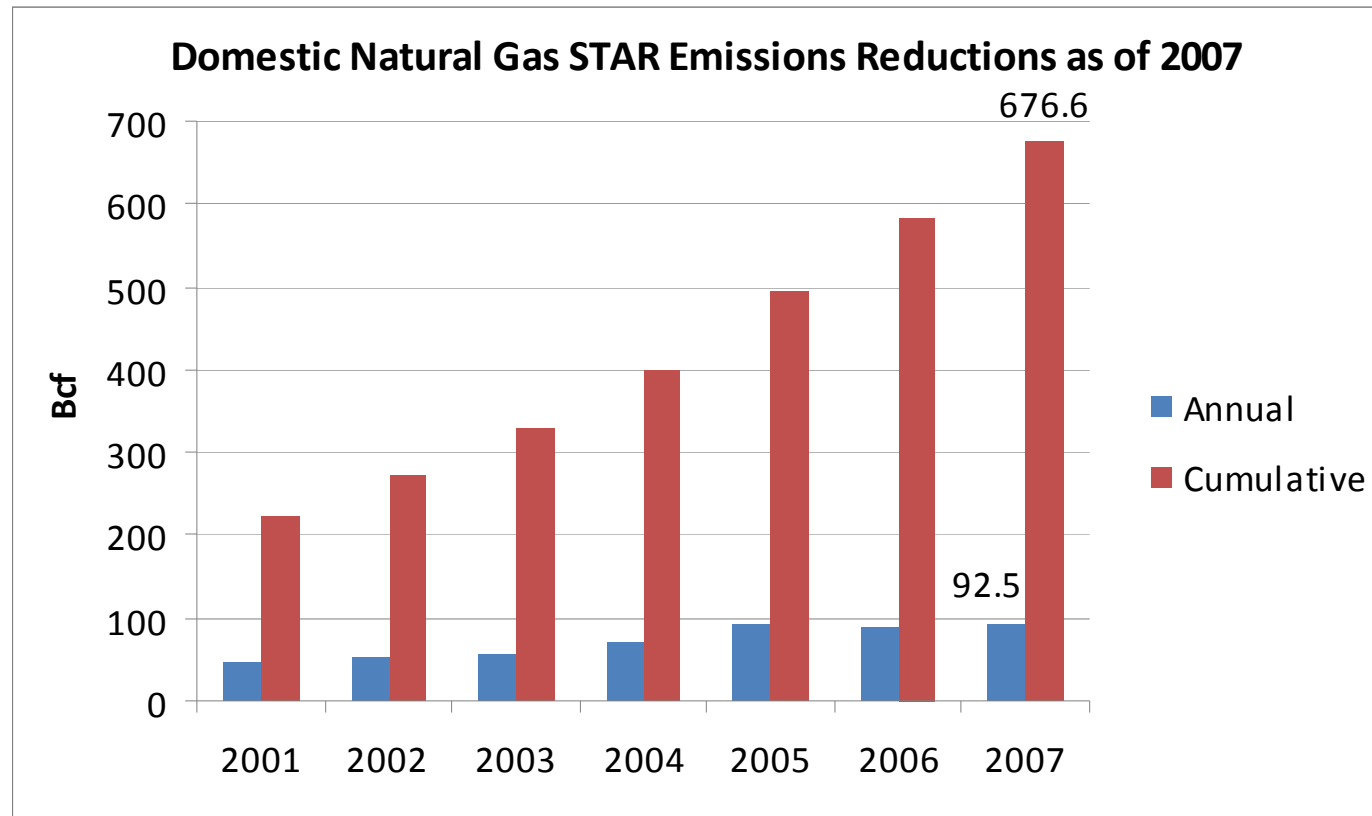
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- 🔥 **Step 1: Sign the Memorandum of Understanding (MOU)** and market Gas STAR internally—develop a supportive corporate environment from the beginning.
- 🔥 **Step 2: Submit an Implementation Plan** outlining how Gas STAR will be incorporated into company operations.
- 🔥 **Step 3: Participate in the Gas STAR Program** based on corporate goals and resources, act on cost-effective methane emission reduction opportunities, attend workshops, and report activities and accomplishments.
- 🔥 **Step 4: Submit annual progress reports** (after one full year of participation) documenting the previous year's achievements.



## Accomplishments

- Through participation in the Natural Gas STAR Program, partners reduced methane emissions by **92.5 Bcf in 2007**
- 677 Bcf in cumulative reductions since 1993





# Devon Energy Case Study (Joined July 2003)

## Program Implementation to Ensure Success

- Secured strong senior management support and identified the right implementation manager
- Monthly newsletter tracked participation in Program; fostered competitiveness between business units for highest methane savings
- Developed and implemented a robust web-based methane project and data tracking system (STARtracker)
- Educated field on Program goals, took advantage of technical resources, and participated in workshops



## Examples: Key Achievements and Contributions

- After thorough review of well completion practices and Gas STAR opportunities, implemented Reduced Emission Completions (RECs) in Fort Worth Basin
- Through REC's and other activities, **achieved methane emission reductions of 23.6 Bcf valued at \$165 million** (through 2006)
- Awarded multiple Gas STAR awards i.e., “2005 Production Partner of the Year”
- Donated STARtracker to Gas STAR and generously shared successes



## Resources and Contact Information

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- 🔥 Learn more about Natural Gas STAR, visit: **[epa.gov/gasstar](https://epa.gov/gasstar)**
- 🔥 Detailed information on recommended technologies and practices: **[epa.gov/gasstar/tools/recommended.html](https://epa.gov/gasstar/tools/recommended.html)**
- 🔥 Gas STAR forms including MOU, Implementation Plan, and Annual Reporting forms: **[epa.gov/gasstar/tools/program-forms.html](https://epa.gov/gasstar/tools/program-forms.html)**
- 🔥 Additional information on implementing the Natural Gas STAR Program: **[epa.gov/gasstar/guidelines/index.html](https://epa.gov/gasstar/guidelines/index.html)**



## Contact Information

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